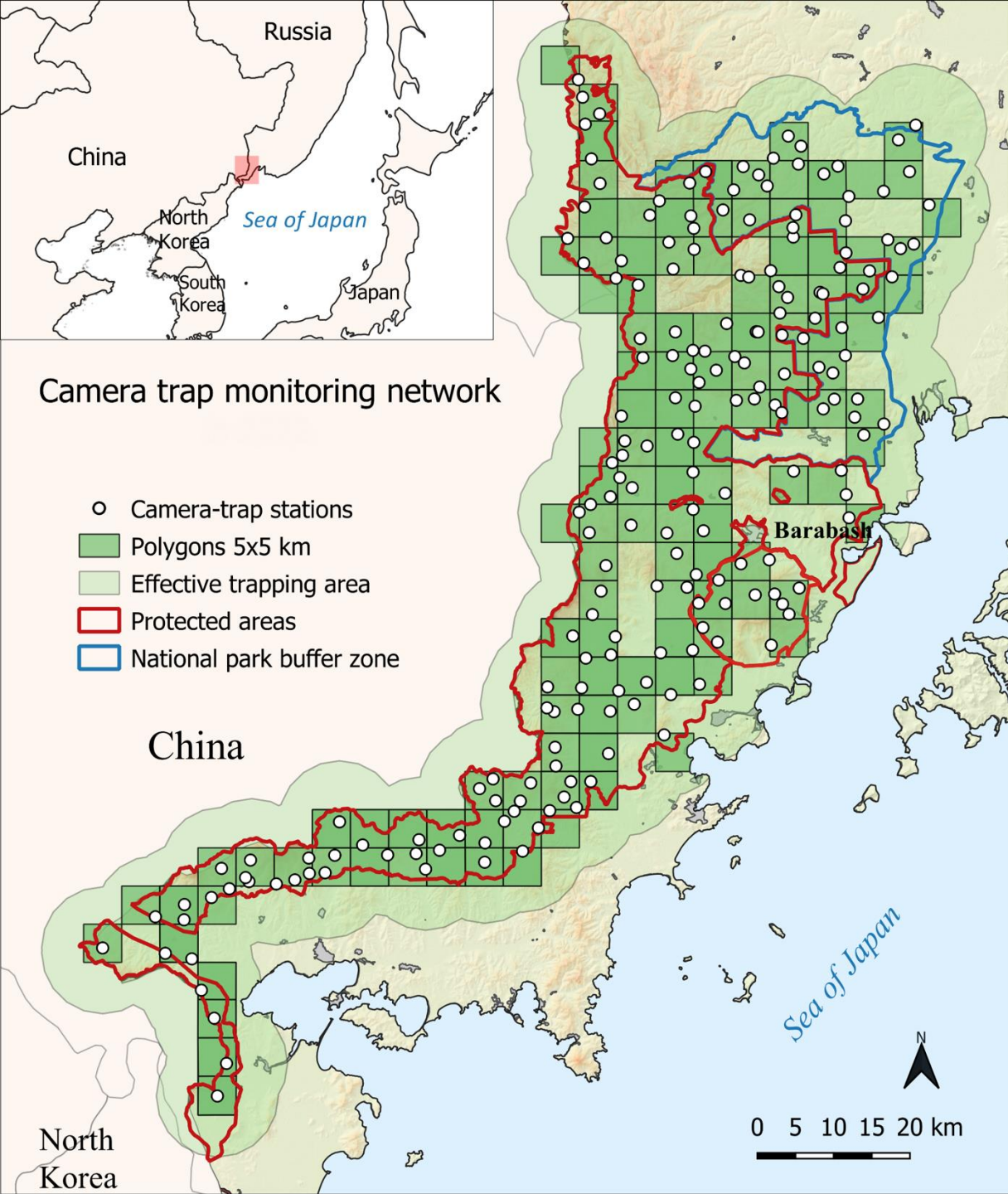


Camera trap monitoring of endangered big cats in the Land of the Leopard: methods and results



Dina S. Matiukhina
Senior research scientist
FSBI Land of the Leopard



2013

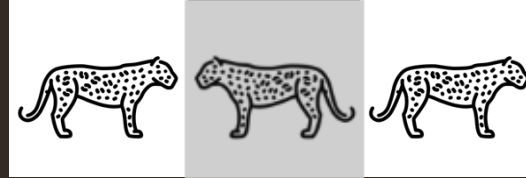
start of the large-scale
camera trap monitoring

2025

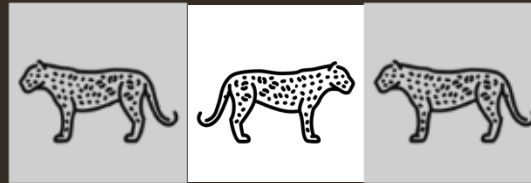
212 regular camera trap stations –
the largest network of Russia

3 760 sq. km
total area

Organization of the camera trap network

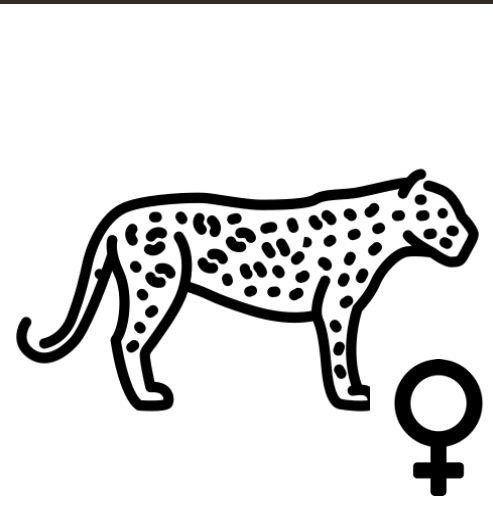


$$p_1 = p_2 = p_3 =$$

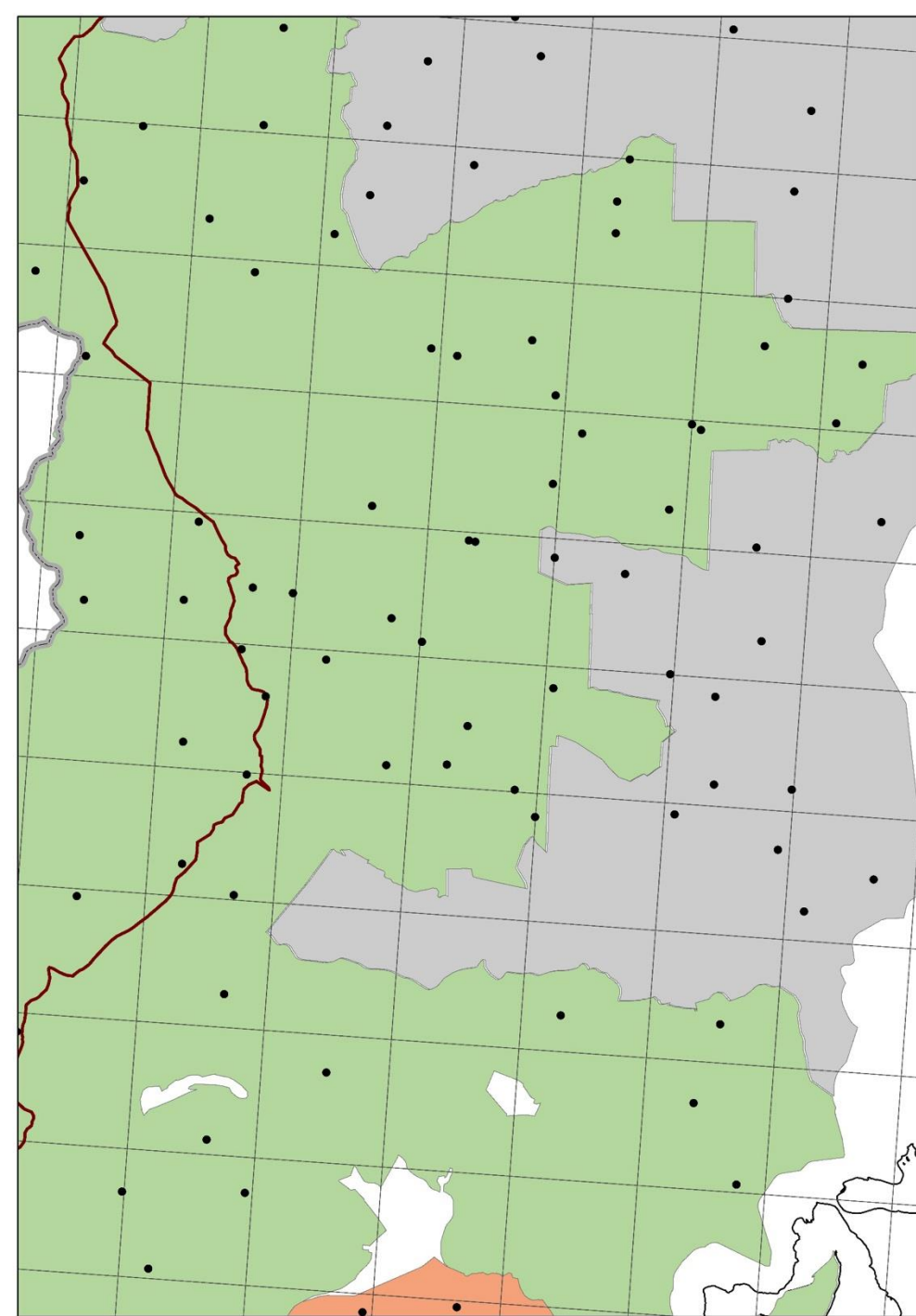


$$p_4 = p_5 = \dots p_i$$

all individuals have equal
chances to be captured

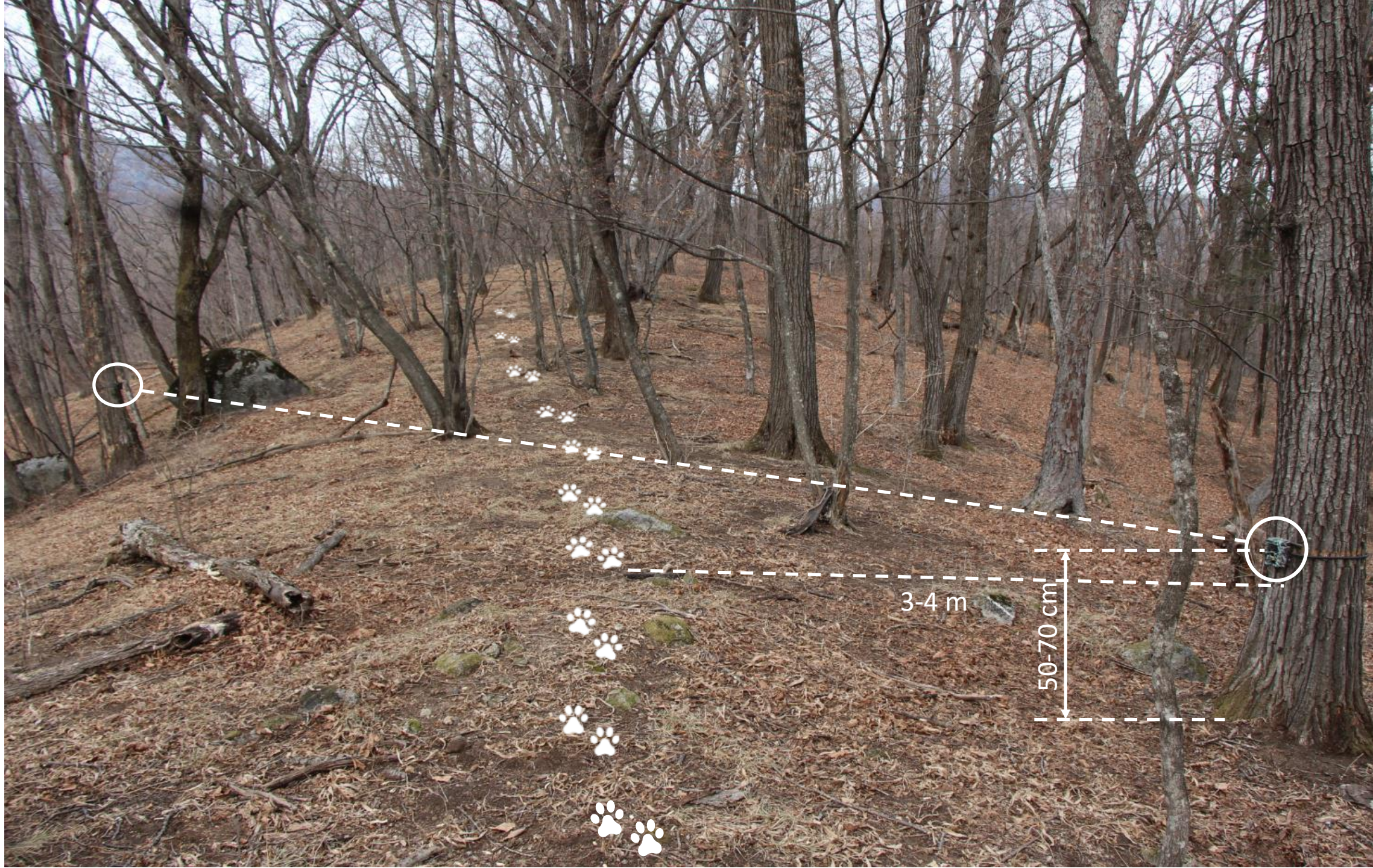


2-3 camera trap stations per
average female Amur leopard
home range – 50 sq. km



Camera trap placement

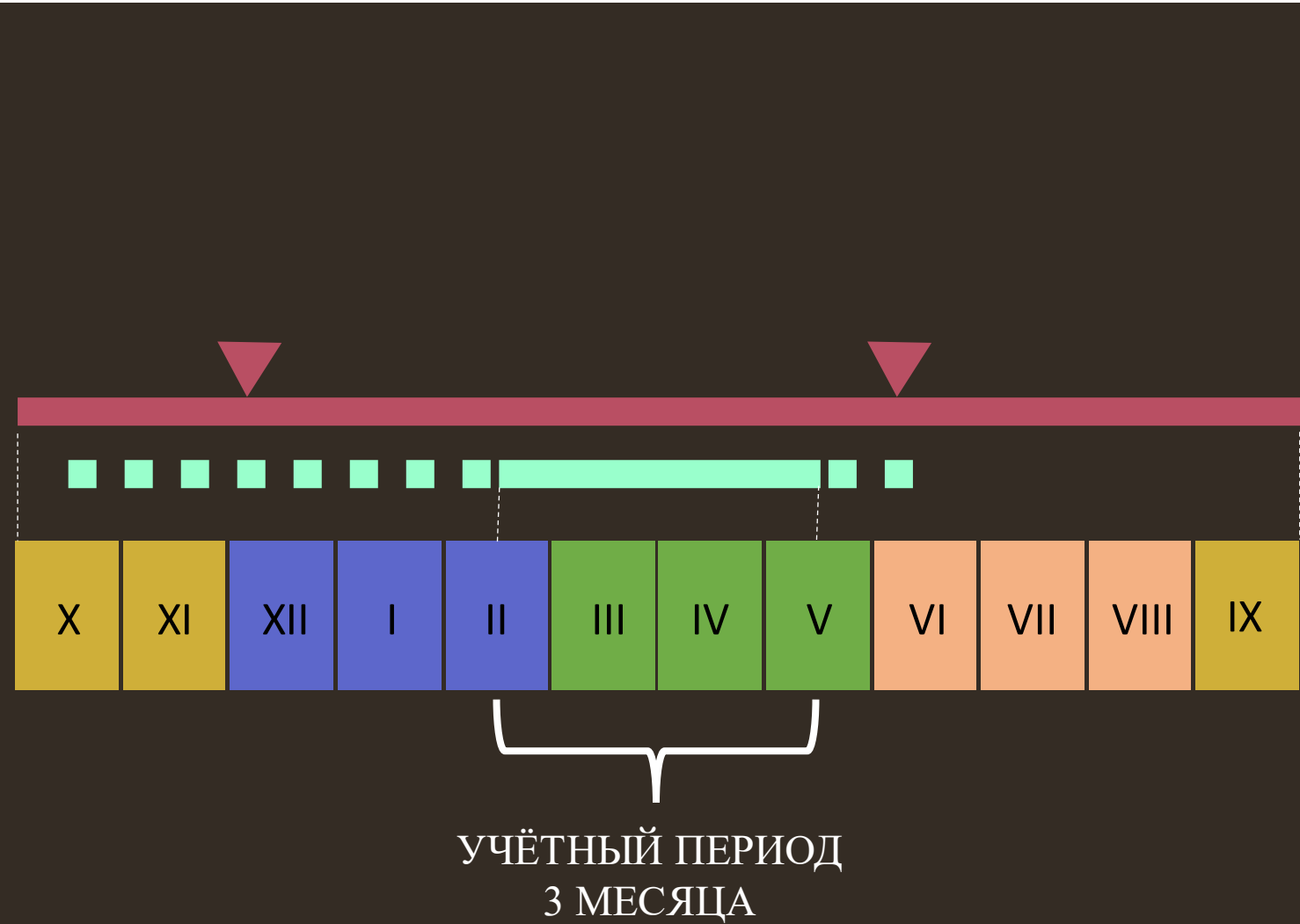
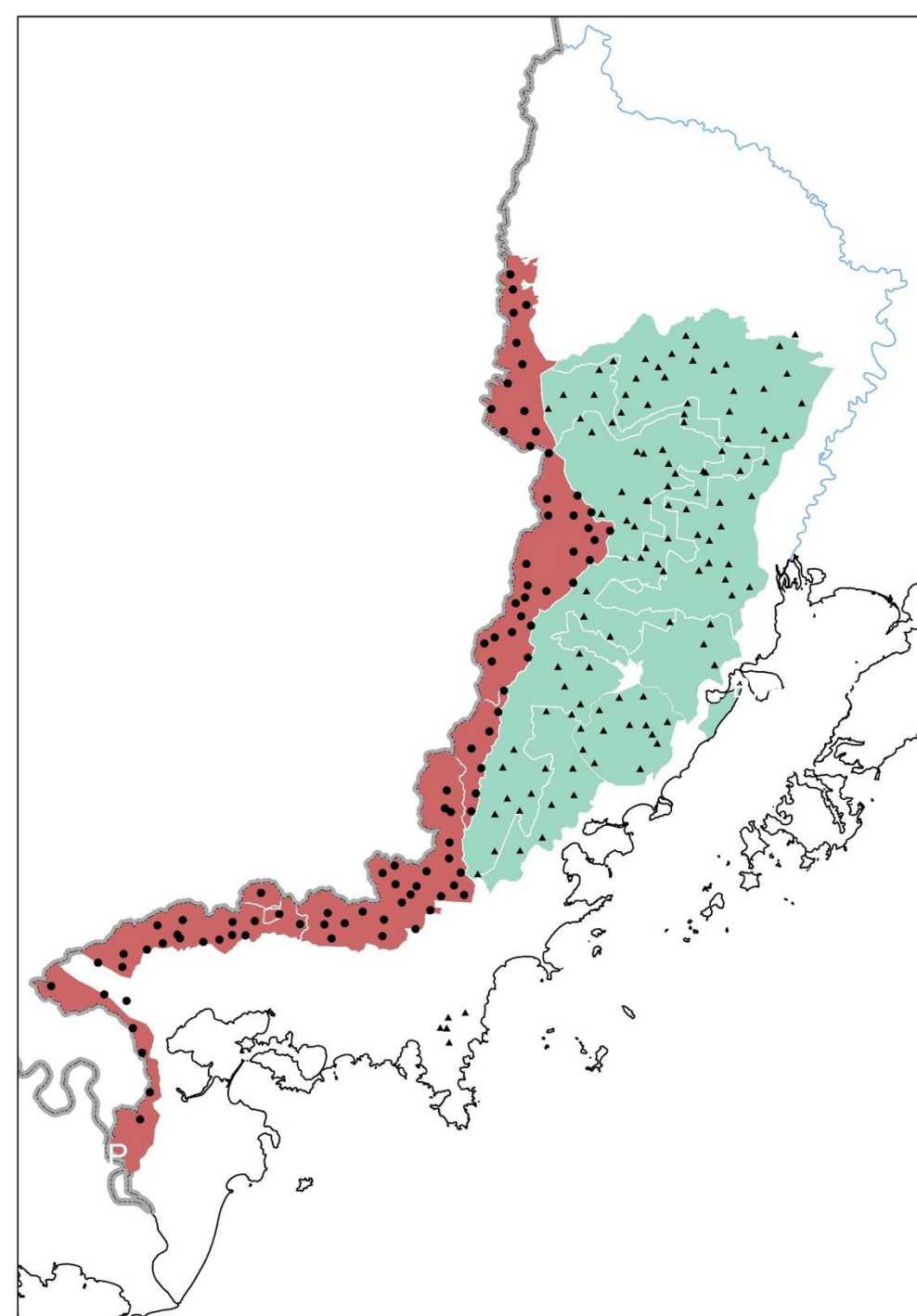




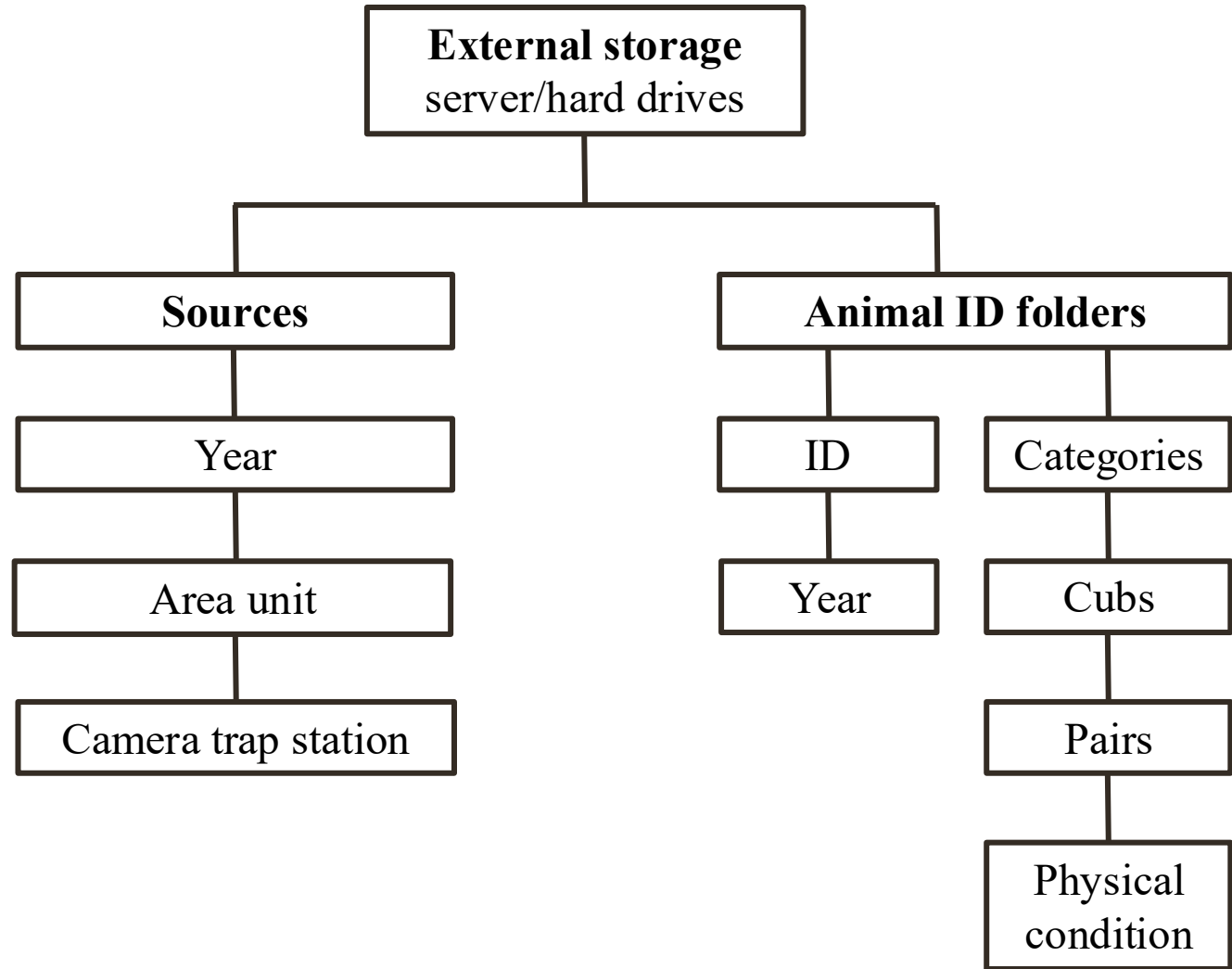
Camera trap camouflage



Camera trap network operation timelines



Camera trap data cataloging



Animal identification

ExtractCompare V1.21

30 150.0

30 150.0

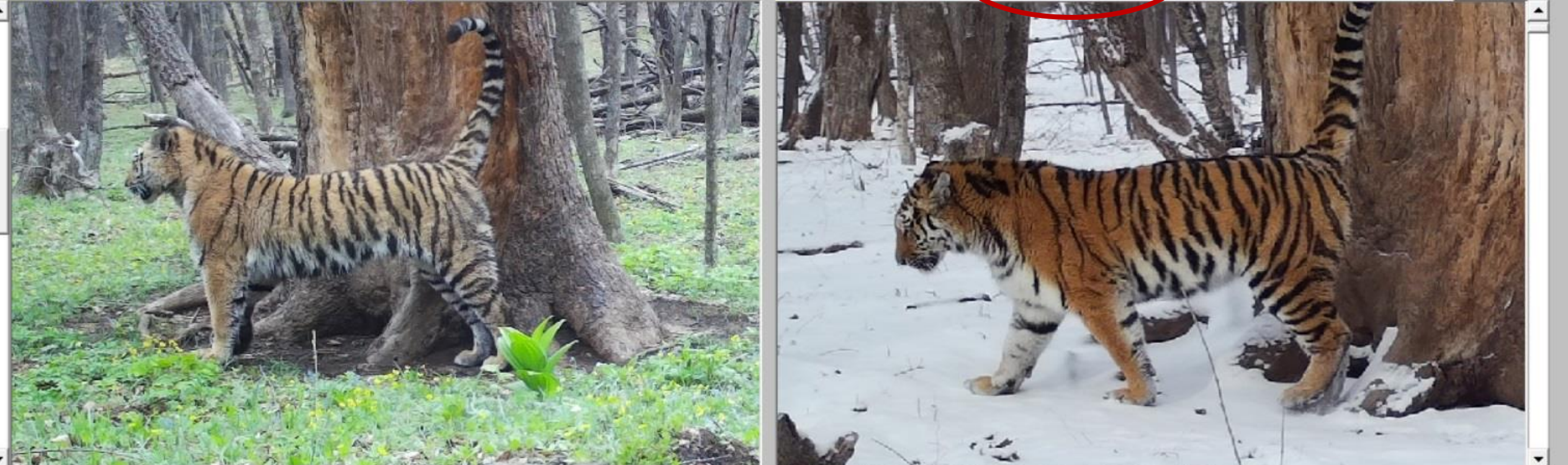
✓ Unique stripe and

rank 2, best score with animal T156F is 1.0000

Match

Comparing standardised scores from all aspects/algorithms

more pics? stop checks



showing: SWP\4116_48_042624_0902_FL of animal SWP_S4607 on 4/26/2024

showing: SWP\4093_48_012224_1233_FL of animal T156F on 1/22/2024



extract from SWP\4116_48_042624_0902_FL, 3 of 4

thinned stripes on wavelet decomp

binary image using 'liqui

Save extract

Capture history

Sighting	Encouner	ID	Sex	Age	Date	Time	CTP ID	X	Y
2598	2874	T28F	Female	Adult	4/15/2022	18:47	2	131.50049	43.43003
2599	2875	T64F	Female	Adult	4/20/2022	18:53	2	131.50049	43.43003
2601	2877	T72F	Female	Adult	3/3/2022	13:29	3	131.99150	43.49746
2604	2880	T86M	Male	Adult	1/30/2022	19:09	4	131.88000	43.47647
2606	2882	T90M	Male	Adult	4/17/2022	3:51	4	131.88000	43.47647
2607	2883	T72F	Female	Adult	5/8/2022	0:38	4	131.88000	43.47647
2608	2884	T28F	Female	Adult	1/28/2022	11:09	5	131.47750	43.44072
2609	2885	T54M	Male	Adult	4/14/2022	9:04	5	131.47750	43.44072
2610	2886	T85F	Female	Adult	2/12/2022	9:54	6	131.34810	43.39882



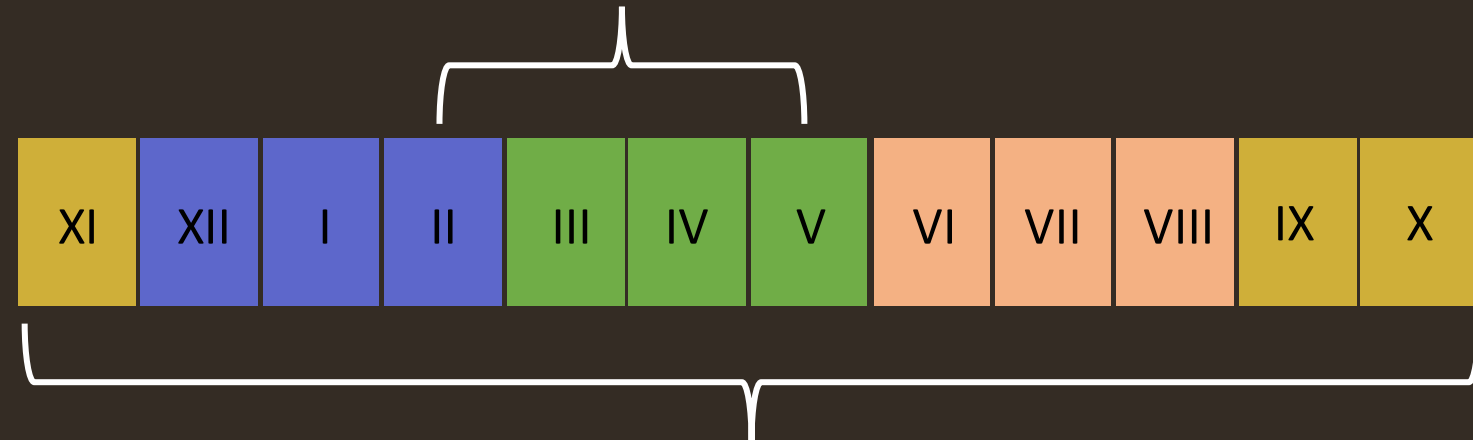
Demographic parameters



Minimum counts

Density (openCR/SECR)

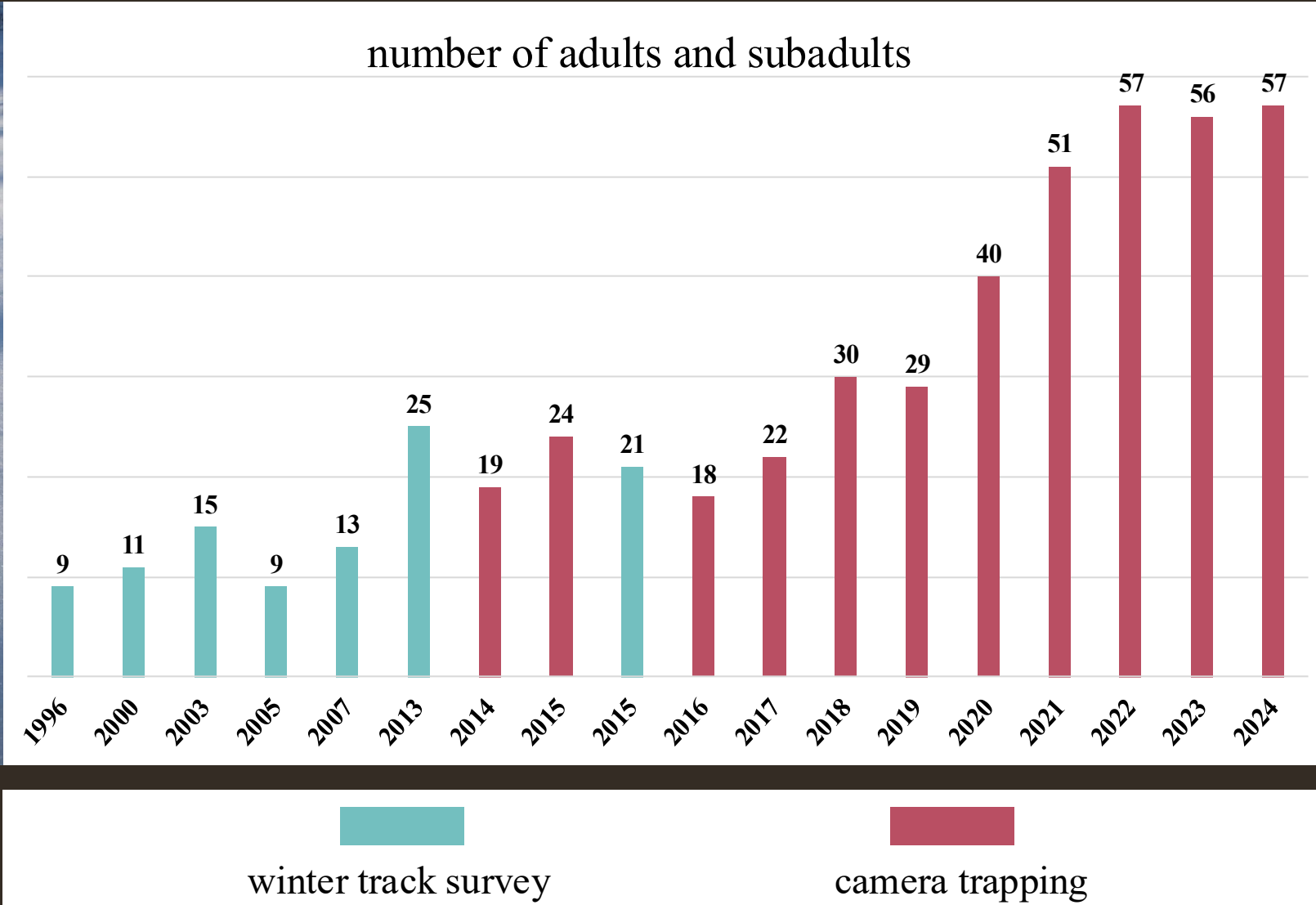
Sex ratio (females : males)

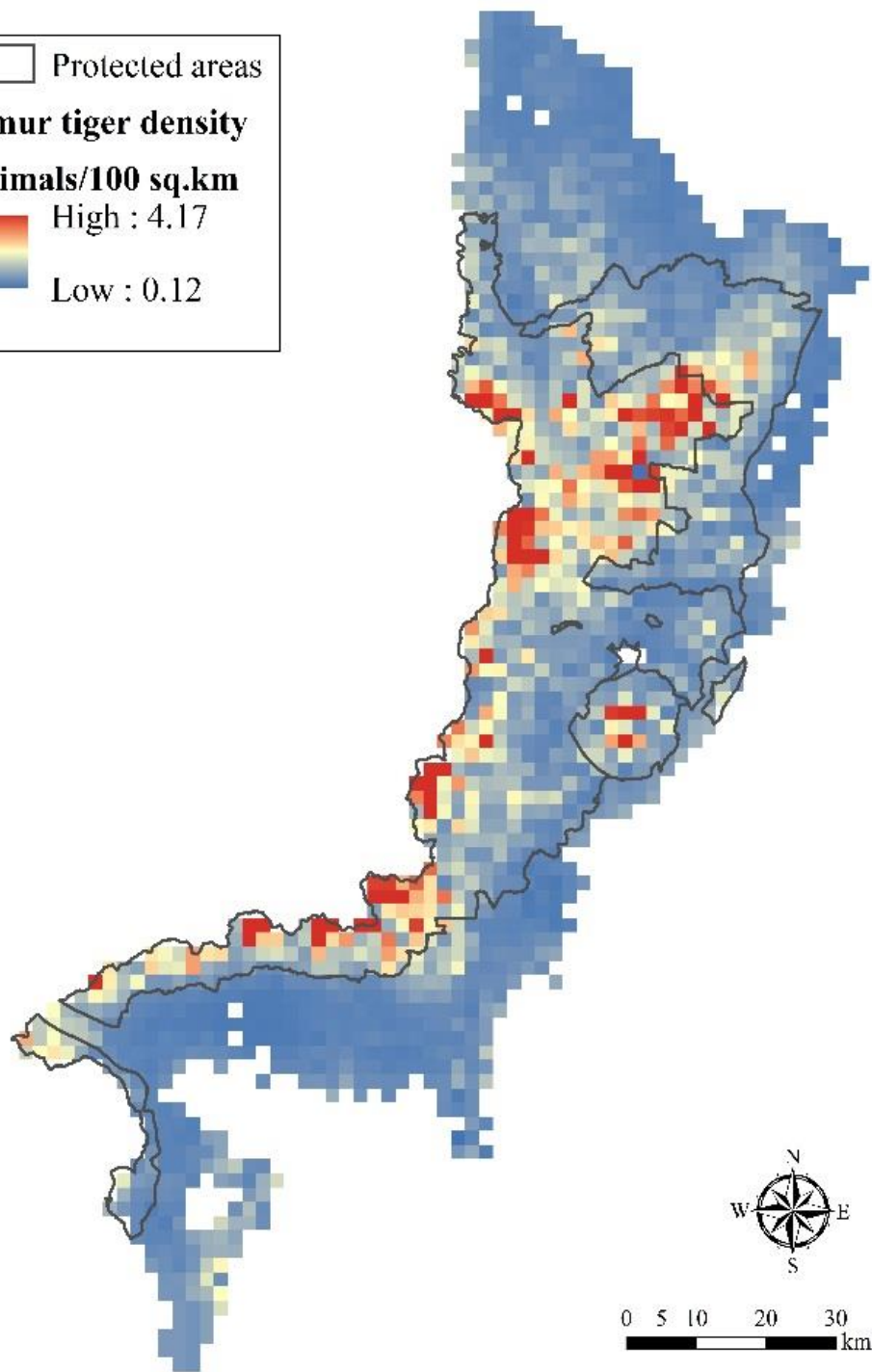
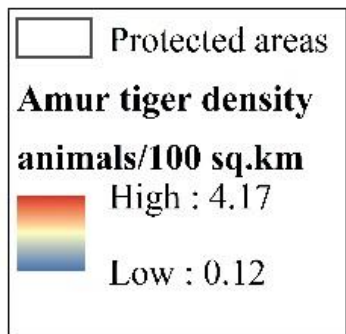


Reproduction:

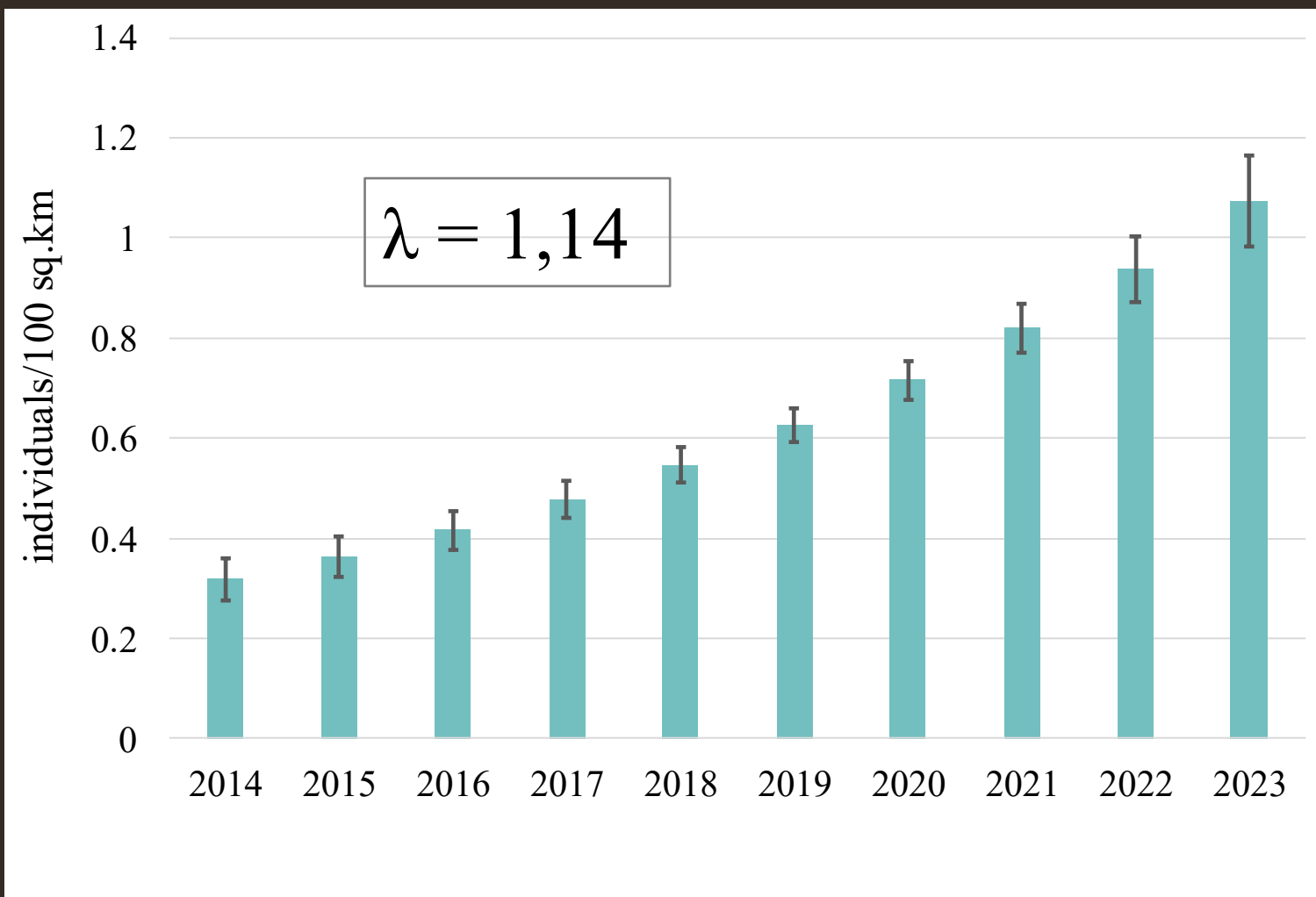
- number of litters
- total number of cubs

Amur tiger population minimum counts

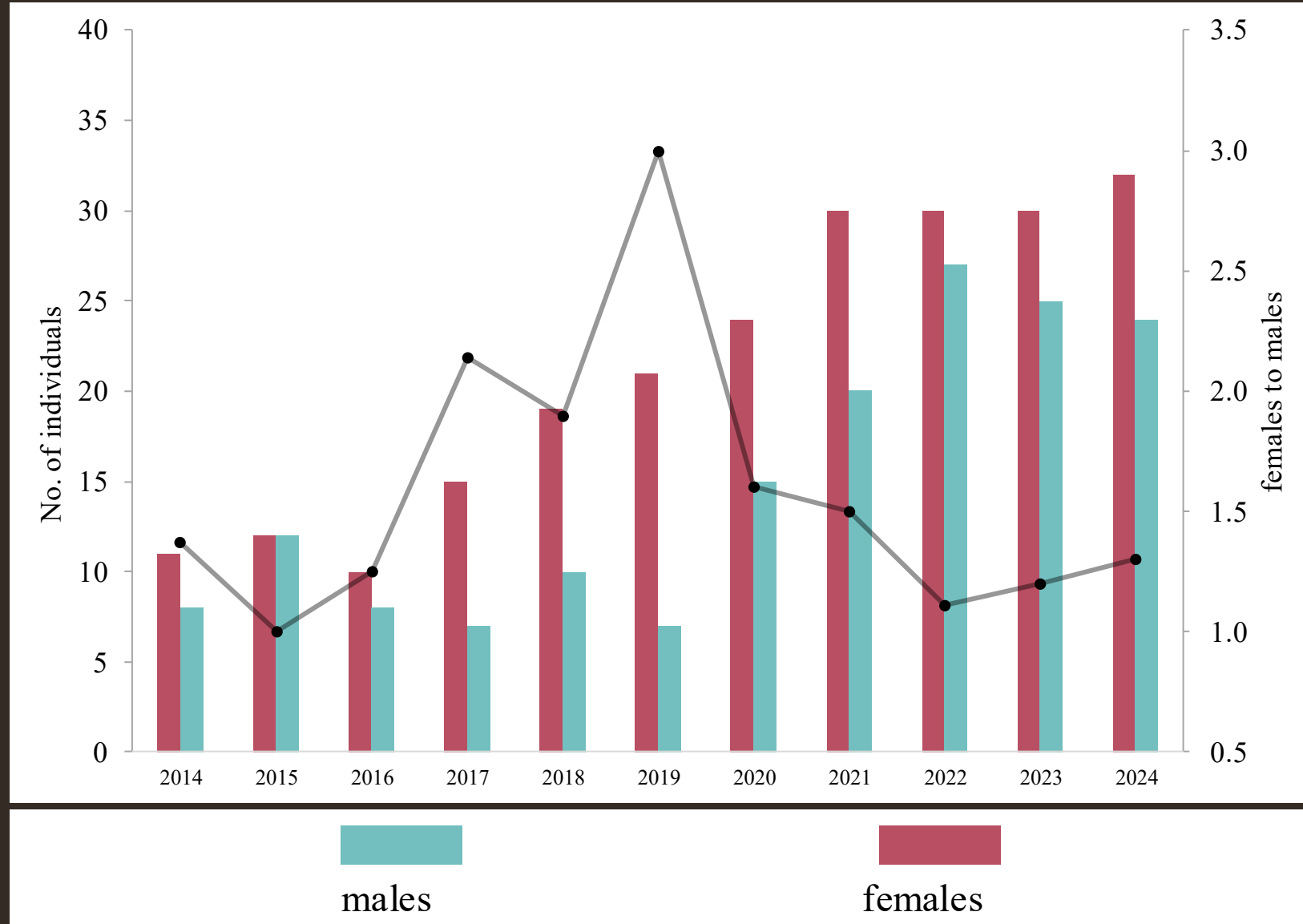




Amur tiger population density

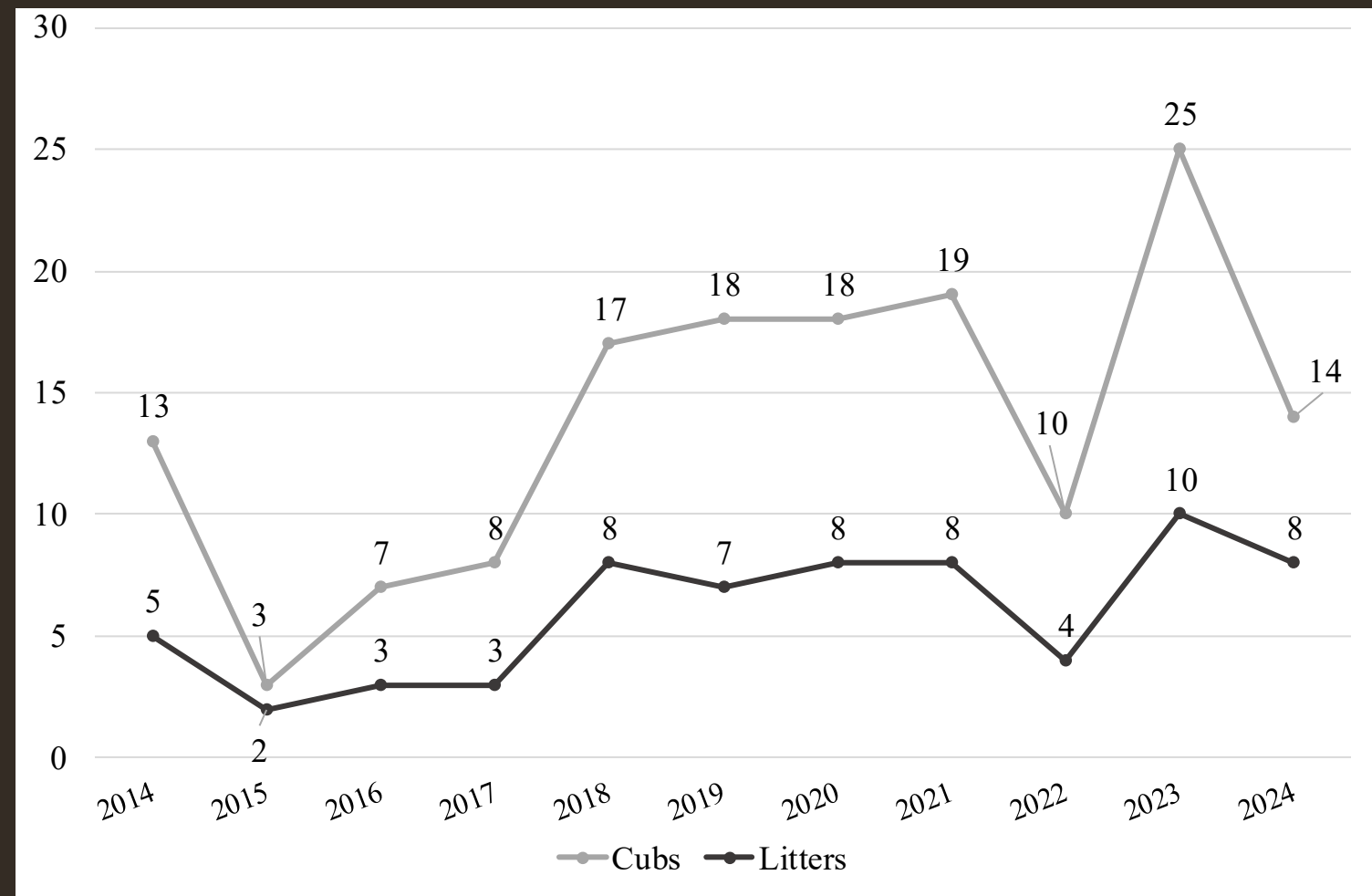


Sex ratio



Reproduction

- overall 66 Amur tiger litters and 152 cubs were documented in 2014-2024
- average litter size is 2.4 ± 0.4 (SD)
- Average annual proportion of breeding females constitutes 26.6 ± 8.7 (SD) %



Reproduction



T
h
a
n
k

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o
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